WHAT IS CLAIMED IS:

1. A high-turning and high-transonic blade for use in a blade cascade of an axial-flow compressor including a large number of blades, each having an intrados adapted to generate a positive pressure and an extrados adapted to generate a negative pressure, disposed in an annular fluid passage,

wherein a distribution of flow speed on the extrados of the blade has a supersonic region of a substantially constant flow speed in the rear of a first large value of the flow speed and inside a position corresponding to 15% of a chord length from a leading edge of the blade.

2. A high-turning and high-transonic blade according to claim 1, wherein the supersonic region is established so that a value obtained by the division of a difference between Mach numbers at front and rear ends of the supersonic region by the chord-wise length of the supersonic region is smaller than 1, and a maximum Mach number in the supersonic region is smaller than 1.4.

3. A high-turning and high-transonic blade for use in a blade cascade of an axial-flow compressor including a large number blades, each having an intrados adapted to generate a positive pressure and an extrados adapted to generate a negative pressure, disposed in an annular fluid passage,

wherein a first small value of curvature of the extrados is set to be sufficiently small at a leading edge of the blade, and a variation in curvature in the rear of the first small value is set to be small, whereby a first strong shock wave is induced at the leading edge to generate a pressure loss in a main flow, and a second weak shock wave is induced in the rear of the first shock wave to reduce a pressure loss in a following flow on the blade, whereby total pressure loss due to the first and second shock waves is reduced.

4. A high-turning and high-transonic blade according to claim 1, wherein a curvature of the extrados of the blade has a first small value inside a position corresponding to 5% of the chord length, the first small value being smaller than 0.6.

5. A high-turning and high-transonic blade according to claim 2, wherein a curvature of the extrados of the blade has a first small value inside a position corresponding to 5% of the chord length, the first small value being smaller than 0.6.

6. A high-turning and high-transonic blade according to claim 3, wherein the curvature of the extrados of the blade has a first small value inside a position corresponding to 5% of a chord length from a leading edge of the blade, the first small value being smaller than 0.6.

7. A high-turning and high-transonic blade according to claim 1, wherein a turning angle of the blade is set to be equal to or larger than 40°.

8. A high-turning and high-transonic blade according to claim 2, wherein a turning angle of the blade is set to be equal to or larger than 40°.

9. A high-turning and high-transonic blade according to claim 3, wherein a turning angle of the blade is set to be equal to or larger than 40°.

10. A high-turning and high-transonic blade according to claim 1, wherein a Mach number of a main flow to the blade cascade is equal to or larger than 0.825 and smaller than 1.0.

11. A high-turning and high-transonic blade according to claim 2, wherein a Mach number of a main flow to the blade cascade is equal to or larger than 0.825 and smaller than 1.0.

12. A high-turning and high-transonic blade according to claim 3, wherein a Mach number of a main flow to the blade cascade is equal to or larger than 0.825 and smaller than 1.0.

13. A high-turning and high-transonic blade according to claim 3, wherein said total pressure loss is reduced in comparison to a blade which induces a first weak shock wave at the leading edge and a second strong shock wave in the rear of the first shock wave.